

Landslide Prediction And 3D Modelling Based On Cyclic Long And Short Time Series Models

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Abstract: Landslide disasters are widely distributed, frequent and difficult to predict, and the three-dimensional landslide control platform provides new ideas and technical support for disaster prevention and control. The formation of landslides is the result of the joint action of internal and external factors, and it is important to judge the correlation between the factors and construct real-time dynamic 3D for the monitoring and control of disasters. Meanwhile, the evolution process of landslides has significant non-linear characteristics, and traditional mathematical models and regression prediction methods can fit the displacement of landslides, but it is difficult to accurately reflect the state changes in the evolution process. Therefore, through real-time data prediction, analysis of the association between multiple heterogeneous data, machine learning modelling of the nonlinear process is the key problem of landslide over prediction, three-dimensional real-time reconstruction of the disaster, and visualisation provides an important platform basis for the control and intuitive analysis of the disaster. In this study, we extracted and fused digital elevation, remote sensing images and monitoring data to achieve real-time landslide identification, dynamic modelling, and predicted the evolution of the disaster by combining with machine learning methods. It aims to provide a new way for the dynamic prediction of landslides and 3D visualisation research.

Keywords: landslide; evolution; 3D modelling; time series model